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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,841	02/18/2004	Hideya Takeo	Q79921	9436

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WASHINGTON, DC 20037

EXAMINER
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AZARIAN, SEYED H

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/779,841

Applicant(s)

TAKEO, HIDEYA

Examiner

Seyed Azarian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/18/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-8, rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, of (U.S. Patent No. 7,187,789). Although the conflicting claims are not identical, they are not patentably distinct from each other because all of the features of the current claim of application are covered in the patented application.

As an example consider claim 1, of current application, compared to claim 1, of patent application, it discloses a prospective abnormal shadow detecting system comprising a prospective abnormal shadow detecting means which detects a prospective abnormal shadow in an image on the basis of image data representing the image and a prospective abnormal shadow information output means which outputs information on the prospective abnormal shadow detected by the prospective abnormal shadow detecting means, wherein the improvement comprises that a malignancy judging means which judges whether the prospective abnormal shadow detected by the

prospective abnormal shadow detecting means is malignant or benignant is provided, and the prospective abnormal shadow information output means outputs the information on the prospective abnormal shadow in such a manner that whether the prospective abnormal shadow is malignant or benignant as judged by the malignancy judging means can be distinguished, and in which the malignancy judging means judges whether the prospective abnormal shadow detected by the prospective abnormal shadow detecting means is malignant or benignant by obtaining a benignancy evaluation function value which is a value of an evaluation function for benignancy, a malignancy evaluation function (column 19, line 34 through column 20, line 15).

### **Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 define " a computer program for causing a computer to execute an abnormal shadow detecting process". However, the claim does not define a "computer-readable medium", or computer readable medium encoded with a computer program, such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9, are rejected under 35 U.S.C. 102(b) as being anticipated by Takeo (U.S. patent 6,272,233).

Regarding claim 1, Takeo discloses an abnormal shadow detecting method comprising the steps of detecting primary prospective abnormal shadow regions in images of objects by different kinds of detecting processes determining whether or not the respective primary prospective abnormal shadow regions are of a desired abnormal shadow by methods different from each other according to the kinds of processes by which the respective primary prospective abnormal shadow regions are detected (see abstract refer to different values, also column 6, line 50 through column 7, line 5, detection of the definite prospective abnormal pattern in accordance with the difference value carried out by comparing the difference value and a predetermined threshold value with each other);

and outputting as final prospective abnormal shadow regions only primary prospective abnormal shadow regions, which are determined to be of a desired abnormal shadow (column 7, lines 27-45, detected prospective abnormal pattern in the radiation image located in the region and output signal being thereby obtained).

Regarding claim 2, Takeo discloses an abnormal shadow detecting method as defined in claim 1 in which whether or not the respective primary prospective abnormal shadow regions are of a desired abnormal shadow is determined on the basis of a combination of a plurality of characteristic values for the respective primary prospective abnormal shadow regions predetermined by the kinds of processes by which the respective primary prospective abnormal shadow regions are detected (see claim 1, also column 25, lines 13-54, using parameters corresponding to the distance from a predetermined point, base on the characteristics such that the image density gradient at an image portion).

Regarding claim 3, Takeo discloses an abnormal shadow detecting method as defined in claim 2 in which whether or not the respective primary prospective abnormal shadow regions are of a desired abnormal shadow is determined on the basis of Mahalanobis distances in the plurality of characteristic values (column 21, lines 50-53, the rating function value calculating, the Mahalanobis distance described above).

Regarding claim 4, Takeo discloses an abnormal shadow detecting method as defined in claim 1 in which the object is a breast (column 19, lines 53-63, refer to mammogram).

Regarding claim 9, Takeo discloses a computer program for causing a computer to execute an abnormal shadow detecting process comprising the steps of detecting primary prospective abnormal shadow regions in images of objects by different kinds of detecting processes (see claim 1, also Fig. 2, column 19, lines 24-50, computer aided medical image diagnoses).

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Regarding claims 5, 6, 7 and 8, it recites similar limitation as claims 1, 2, 3 and 4, are similarly analyzed.

### Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent (5,732,121) to Takeo et al is cited for method for detecting abnormal pattern.

U.S. patent (5,768,333) to Abdel-Mottaleb is cited for mass detection in digital radiologic images using a two-stage classifier.

U.S. patent (6,748,044) to Sabol et al is cited for computer-assisted analysis of tomography mammography data.

U.S. patent (5,761,334) to Nakajima et al is cited for apparatus for computer-aided diagnosis of medical images having abnormal pattern.

### **Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian  
Patent Examiner  
Group Art Unit 2624  
April 3, 2007

*Seyed azarian*